



# HDM90

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## INSTALLATION/OWNER'S MANUAL

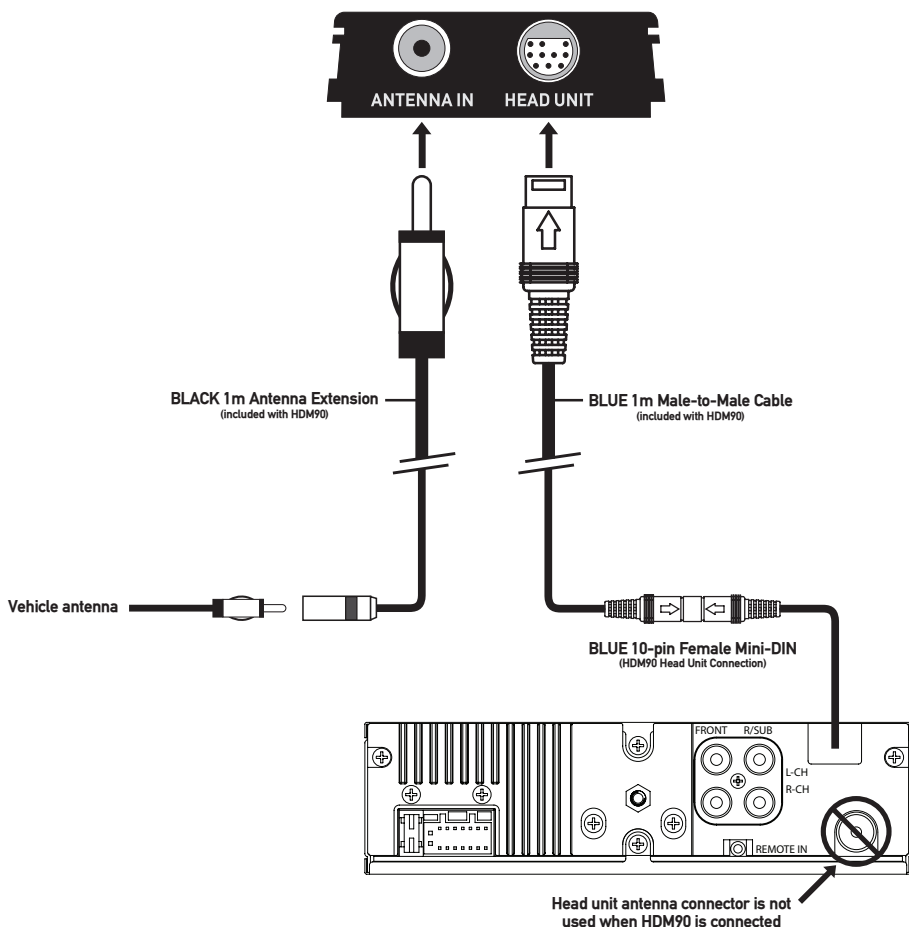
HD Radio™ Tuner





## HDM90 INSTALLATION

# Installation



### Connecting the HDM90:

- With the arrow facing up, line up and connect one end of the included blue mini-DIN cable to the connector labeled "HEAD UNIT" on the HDM90. The cable and connector are keyed to only fit one way. Make sure not to turn the cable when connecting as it may damage the pins in the cable.
- Connect the other end of the blue mini-DIN cable to the blue 10-pin connector on the back of the head unit. The included blue mini-DIN cable is not directional.
- Disconnect the vehicle antenna connector from the head unit (if connected) and plug the vehicle antenna into the HDM90, using the included 1m antenna extension cable (if necessary). The antenna connector on the back of the head unit will not be used after the HDM90 is installed.
- After routing the cables carefully, secure the HDM90 away from moving parts using cable ties or screws using the chassis mounting tabs. Always check for proper clearance before you drill.

## HD Radio™ AM/FM Tuner Operation

### Overview

The HDM90 HD Radio Tuner receives both analog and digital radio stations. Once connected, the HDM90 provides a higher quality digital version of many existing radio stations, and enables extra HD2 and HD3 FM radio stations called multicast channels.

### Analog to Digital Blending

Once an HD Radio station is selected, the HD Radio logo will flash in the display for about 5 seconds, indicating that the signal is blending from analog to digital. After the HD Radio signal is received, the HD Radio logo will remain solid in the display, indicating that the tuner is receiving a digital signal.

### Multicast Channels (see illustration below)

After the HD Radio logo remains solid in the display, HD or HD1 will illuminate after the radio frequency.

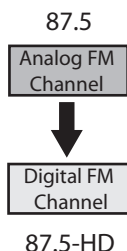
- If "HD" appears, the radio station is broadcasting a higher quality sound. No additional stations are available.
- If "HD1" appears, additional multicast channels (HD2 and/or HD3) are available.

A multicast channel is a digital-only radio station that cannot be received by a standard analog tuner. These channels are labeled as HD2 or HD3 (Example: 106.7-HD2). Once the HD1 station blends to digital, the HD2 or HD3 multicast channels may be available by pressing the **TRACK UP** button.

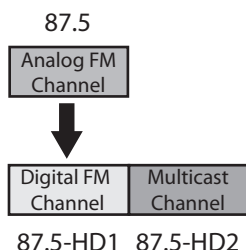
**Note:** Only FM radio stations can have multicast channels.

## Example of HD Radio Channels

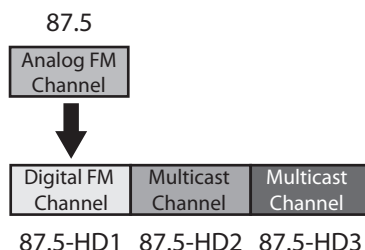
### No multicast channels available



### One multicast channel available



### Two multicast channels available



**Note:** Channel 87.5 is used as an example and may not represent an HD Radio station. Multicast channel availability varies per HD Radio station.



## HD Radio™ AM/FM Tuner Operation

Setting Multicast Presets	Multicast channels can be set as a preset radio station (1-6) just like analog radio stations, by holding the button for desired preset number down for about 3 seconds. Presets may be set in any band: FM1, FM2, FM3, AM1 or AM2.
Recalling Multicast Presets	<p>A saved preset multicast channel can be recalled by momentarily pressing the desired preset button.</p> <p>When you recall an HD2 or HD3 multicast channel, there will be a 5 second delay before the audio can be heard while the HD Radio signal is received. The head unit will display "LINKING" indicating that it is waiting for the signal to be received.</p>
Low signal	<p>On an HD1 HD Radio station where an analog version of the station is available, when the signal level of the station is low the tuner will revert back to the analog version of the radio station.</p> <p>On an HD2 or HD3 multicast HD Radio station, when the signal level is low, the head unit will display "LINKING" indicating that it is waiting for sufficient signal level.</p>
Display	<p>When the unit is tuned to an <b>analog station</b>, you can toggle between information such as radio frequency, preset information, clock, etc.</p> <p>When the unit is tuned to an <b>HD Radio station</b>, you can toggle between information such as radio frequency, artist, song title, program type, station name, etc.</p>
HD Seek Mode	HD Seek mode enables the tuner to skip over analog stations and tune to HD Radio stations only. Once enabled, functions such as seek, scan and auto station store will only apply to HD Radio stations. Refer to the instruction manual for your head unit to enable HD Seek mode.
Notes	<ul style="list-style-type: none"><li>Occasionally, HD Radio multicast channels may be added or deleted. If a preset for a multicast channel is set, and the station is not available, the head unit will revert to the main HD1 radio station.</li><li>Functions for the HD Radio tuner mode may vary depending on the head unit model. Refer to the instruction manual for your head unit for specific tuner functions such as tune, seek, scan, presets or auto station store.</li></ul>



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## HD Radio™ AM/FM Tuner Operation

### iTunes® Tagging

The iTunes Tagging feature of the HDM90 allows the user to "Tag" songs that are playing on HD Radio stations and enables them to be purchased later through iTunes. With the touch of a button the unit will remember the title and artist song information, and then transfer that information to your iPod device the next time you connect it to the head unit. A new list called "Tagged" will appear in iTunes, giving you the option to purchase each song.

Refer to the instruction manual for your head unit for detailed operation and iPod device compatibility. Visit [www.hdradio.com/tagging.php](http://www.hdradio.com/tagging.php) for more information.



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# FCC Compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

**Warning:** Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**Note:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## Limited One Year Warranty

This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

Dual Electronics Corp. warrants this product to the original purchaser to be free from defects in material and workmanship for a period of one year from the date of the original purchase.

Dual Electronics Corp. agrees, at our option, during the warranty period, to repair any defect in material or workmanship or to furnish an equal new, renewed or comparable product (whichever is deemed necessary) in exchange without charges, subject to verification of the defect or malfunction and proof of the date of purchase. Subsequent replacement products are warranted for the balance of the original warranty period.

**Who is covered?** This warranty is extended to the original retail purchaser for products purchased from an authorized Dual dealer and used in the U.S.A.

**What is covered?** This warranty covers all defects in material and workmanship in this product. The following are not covered: software, installation/removal costs, damage resulting from accident, misuse, abuse, neglect, product modification, improper installation, incorrect line voltage, unauthorized repair or failure to follow instructions supplied with the product, or damage occurring during return shipment of the product. Specific license conditions and copyright notices for the software can be found via [www.dualav.com](http://www.dualav.com).

### What to do?

1. Before you call for service, check the troubleshooting guide in your owner's manual. A slight adjustment of any custom controls may save you a service call.
2. If you require service during the warranty period, you must carefully pack the product (preferably in the original package) and ship it by prepaid transportation with a copy of the original receipt from the retailer to an authorized service center.
3. Please describe your problem in writing and include your name, a return UPS shipping address (P.O. Box not acceptable), and a daytime phone number with your shipment.
4. For more information and for the location of the nearest authorized service center please contact us by one of the following methods:

- Call us toll-free at 1-866-382-5476
- E-mail us at [cs@dualav.com](mailto:cs@dualav.com)

**Exclusion of Certain Damages:** This warranty is exclusive and in lieu of any and all other warranties, expressed or implied, including without limitation the implied warranties of merchantability and fitness for a particular purpose and any obligation, liability, right, claim or remedy in contract or tort, whether or not arising from the company's negligence, actual or imputed. No person or representative is authorized to assume for the company any other liability in connection with the sale of this product. In no event shall the company be liable for indirect, incidental or consequential damages.

# Specifications

## FM Tuner

Tuning range: **87.5MHz-107.9MHz**  
Usable sensitivity: **8.5dBf**  
50dB quieting sensitivity: **10dBf**  
Stereo separation @ 1kHz: **40dB**  
Frequency response: **30Hz-13kHz**

## AM Tuner

Tuning range: **530kHz-1710kHz**  
Usable sensitivity: **22uV**  
Frequency response: **30Hz-2.2kHz**

Design and specifications subject to change without notice.



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